

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-33. (Cancelled)

34. (Previously Presented) The solid state imaging apparatus of claim 41, wherein the plurality of photoelectric elements are photo diodes.

35. (Previously Presented) The solid state imaging apparatus of claim 39, wherein, the first and second pixel amplifier transistors are coupled to the first and second floating diffusion sections, respectively; and

each of the first and second pixel amplifier transistors comprises a source follower transistor which detects and outputs a voltage potential converted from one of said first floating diffusion section and said second floating diffusion section.

36. (Previously Presented) The solid state imaging apparatus of claim 39, wherein the plurality of read lines are connected to a vertical scanning circuit.

37. (Previously Presented) The solid state imaging apparatus of claim 39, further comprising:

a plurality of a pair of signal lines outputting signals from the first pixel amplifier transistors and the second pixel amplifier transistors, respectively, to the outside.

38. (Cancelled)

39. (Currently amended) A solid state imaging apparatus comprising:

a plurality of photoelectric conversion cells each including a plurality of photoelectric sections arranged in a matrix including at least first and second rows and first and second columns;

a plurality of first floating diffusion sections each being shared by, and being connected to, the photoelectric sections which are included in the first row of each photoelectric conversion cell via a plurality of transfer transistors, respectively;

a plurality of second floating diffusion sections each being shared by, and being connected to the photoelectric sections which are included in the second row of each photoelectric conversion cell via a plurality of transfer transistors, respectively;

a plurality of read-out lines each being selectively connected to at least two of the transfer transistors that are not included in the same row;

a plurality of first pixel amplifier transistors each detecting and outputting the potential of each first floating diffusion section; and

a plurality of second pixel amplifier transistors each detecting and outputting the potential of each second floating diffusion section,

wherein in each photoelectric conversion cell, a gate of a first transfer transistor included in the first row and a gate of a second transfer transistor included in the second row are connected to each other, sharing one of the plurality of read-out lines,

each floating diffusion section is disposed across the two photoelectric conversion cells adjacent to each other in a row direction, and

only two read-out lines are disposed within the photoelectric conversion cells.

40. (Currently amended) ~~The solid-state imaging apparatus of claim 39;~~ A solid state imaging apparatus comprising:

a plurality of photoelectric conversion cells each including a plurality of photoelectric sections arranged in a matrix including at least first and second rows and first and second columns;

a plurality of first floating diffusion sections each being shared by, and being connected to, the photoelectric sections which are included in the first row of each photoelectric conversion cell via a plurality of transfer transistors, respectively;

a plurality of second floating diffusion sections each being shared by, and being connected to the photoelectric sections which are included in the second row of each photoelectric conversion cell via a plurality of transfer transistors, respectively;

a plurality of read-out lines each being selectively connected to at least two of the transfer transistors that are not included in the same row;

a plurality of first pixel amplifier transistors each detecting and outputting the potential of each first floating diffusion section; and

a plurality of second pixel amplifier transistors each detecting and outputting the potential of each second floating diffusion section,

wherein in each photoelectric conversion cell, a gate of a first transfer transistor included in the first row and a gate of a second transfer transistor included in the second row are connected to each other, sharing one of the plurality of read-out lines, and

wherein in each photoelectric conversion cell, a first read-out line is connected to a gate of a transfer transistor included in the first row and the first column and a gate of a transfer transistor included in the second row and the first column, and a second read-out line is connected to a gate of a transfer transistor included in the first row and the second column and a gate of a transfer transistor included in the second row and the second column.

41. (Currently amended) ~~The solid-state imaging apparatus of claim 39,~~ A solid state imaging apparatus comprising:

a plurality of photoelectric conversion cells each including a plurality of photoelectric sections arranged in a matrix including at least first and second rows and first and second columns;

a plurality of first floating diffusion sections each being shared by, and being connected to, the photoelectric sections which are included in the first row of each photoelectric conversion cell via a plurality of transfer transistors, respectively;

a plurality of second floating diffusion sections each being shared by, and being connected to the photoelectric sections which are included in the second row of each photoelectric conversion cell via a plurality of transfer transistors, respectively;

a plurality of read-out lines each being selectively connected to at least two of the transfer transistors that are not included in the same row;

a plurality of first pixel amplifier transistors each detecting and outputting the potential of each first floating diffusion section; and

a plurality of second pixel amplifier transistors each detecting and outputting the potential of each second floating diffusion section,

wherein in each photoelectric conversion cell, a gate of a first transfer transistor included in the first row and a gate of a second transfer transistor included in the second row are connected to each other, sharing one of the plurality of read-out lines, and

wherein in each photoelectric conversion cell, a first read-out line is connected to a gate of a transfer transistor included in the first row and the first column and a gate of a transfer transistor included in the second row and the second column, and a second read-out line is connected to a gate of a transfer transistor included in the first row and the second column and a gate of a transfer transistor included in the second row and the first column.

42. (Previously Presented) The solid state imaging apparatus of claim 39, wherein each floating diffusion section and each pixel amplifier transistor are shared by the photoelectric sections in the first row of one of the photoelectric conversion cells and the photoelectric sections in the second row of another of the photoelectric conversion cells.

43. (Previously Presented) The solid state imaging apparatus of claim 39, further comprising:

a signal line for outputting a signal from each pixel amplifier transistor to the outside; and
a select transistor which is provided between the pixel amplifier transistor and the signal line to selectively conduct between the pixel amplifier transistor and the signal line.

44. (Previously Presented) The solid state imaging apparatus of claim 39, wherein each floating diffusion section and each pixel amplifier transistor are shared by photoelectric

conversion sections which are adjacent to each other in the row direction or in the column direction.

45. (Previously Presented) The solid state imaging apparatus of claim 39, wherein in each floating diffusion section, a reset section for resetting charge stored in the floating diffusion section.

46. (Previously Presented) The solid state imaging apparatus of claim 39, wherein the photoelectric conversion sections are arranged so as to be spaced apart from one another by a certain distance in the row direction or in the column direction.

47. (Previously Presented) The solid state imaging apparatus of claim 39, further comprising a signal processing circuit for processing an output signal from each pixel amplifier transistor.

48. (Previously Presented) The solid state imaging apparatus of claim 39, wherein the photoelectric conversion cells are separated from one another by a power supply line which also functions as a light-shielding film.

49-65. (Cancelled)

66. (Currently amended) A camera comprising a solid state imaging apparatus, the apparatus including:

a plurality of photoelectric conversion cells each including a plurality of photoelectric sections arranged in a matrix including at least first and second rows and first and second columns;

a plurality of first floating diffusion sections each being shared by, and being connected to, the photoelectric sections which are included in the first row of each photoelectric conversion cell via a plurality of transfer transistors, respectively;

a plurality of second floating diffusion sections each being shared by, and being connected to the photoelectric sections which are included in the second row of each photoelectric conversion cell via a plurality of transfer transistors, respectively;

a plurality of read-out lines each being selectively connected to at least two of the transfer transistors that are not included in the same row; [[and]]

a plurality of first pixel amplifier transistors each detecting and outputting the potential of each first floating diffusion section[[,]]₂ and

a plurality of second pixel amplifier transistors each detecting and outputting the potential of each second floating diffusion section,

wherein in each photoelectric conversion cell, a gate of a first transfer transistor included in the first row and a gate of a second transfer transistor included in the second row are connected to each other, sharing one of the plurality of read-out lines,

each floating diffusion section is disposed across the two photoelectric conversion cells adjacent to each other in a row direction, and

only two read-out lines are disposed within the photoelectric conversion cells.

67. (Cancelled)

68. (Previously Presented) The solid state imaging apparatus of claim 39, wherein respective charges of the photoelectric conversion sections each being connected to one of the read-out lines and being read out by the transfer transistors are read out by said first floating diffusion sections or said second floating diffusion sections.

69. (Previously Presented) The camera of claim 66, wherein respective charges of the photoelectric conversion sections each being connected to one of the read-out lines and being read out by the transfer transistors are read out by said first floating diffusion sections or said second floating diffusion sections.

70. (Cancelled)

71. (Cancelled)